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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/715,520      | 11/19/2003  | Toru Kasai           | 032074              | 4686             |

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EXAMINER

AN, SANG WOOK

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1732

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/715,520 | <b>Applicant(s)</b><br>KASAI ET AL. |  |
|                              | <b>Examiner</b><br>Sang W. An        | <b>Art Unit</b><br>1732             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) 3-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/9/2005</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claim 1-2, drawn to the method for continuously molding a fiber reinforced plastic member with curvature, classified in class 264, subclass 137.
  - II. Claim 3-5, drawn to the apparatus for continuously molding a fiber reinforced plastic member with curvature, classified in class 425, subclass 89.
2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed in Group II, i.e. device for feeding release film, device for feeding plural sheets of prepreg material, a device for laminating and deforming, and hot press etc., can be used to practice another materially different process such as preparing a continuously molded article/substrate with antistatic coating.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Joseph Felber on 11/30/05 a provisional election was made without traverse to prosecute the invention of Group I,

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claim 1-2. Affirmation of this election must be made by applicant in replying to this Office action. Claim 3-5 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al (US 4954304) in view of Watanabe et al (4673541). As to claim 1, Ohtake teaches a method for continuously molding (Col 9 Line 52) a fiber reinforced plastic

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member with a curvature (Col 14 Line 21, Note that the examiner has interpreted "roll form" to mean having a curvature. In addition, the "workability on handling" is interpreted to mean the product could be manipulated to make any shape.) utilizing a core having a shape corresponding to the shape of the member with a curvature and disposed on a plane (Col 9 Line 49, Note "dried base" serves as the core.) Ohtake also teaches a step of feeding a release film (Col 9 Line 50), a step of feeding plural sheets of semi-cured prepreg material (Col 9 Line 49) formed by impregnating carbon or glass fiber with thermosetting resin (Col 1 Line 17), a step of laminating and deforming the prepreg into a predetermine shape (Col 11 Line 63), a step of hot-pressing the laminated and deformed release film and laminated body into a predetermined shape (Col 9 Line 51, the temperature of the pressing machine is assumed to be 130-220° C), a step of post-curing the laminated body exiting the hot-pressing step by heating the same (Col 9 Line 63).

However, Ohtake does not teach pullers disposed before and after the hot pressing step for gripping the laminated body and introducing the same into the hot press and does not teach adjusting the width of the prepreg so that the angle of meandering of the fiber in the longitudinal direction is 5 degree or smaller.

Nevertheless, Watanabe does teach two grasping mechanisms, which can synchronously move with the mandrel (Col 5 Line 3) thereby preventing tension from being placed on the fiber in the prepreg and suppress the uneven distribution and disturbance in the orientation of the carbon fibers. Therefore it would have been obvious to the one having ordinary skill in the art at the time of invention to use

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Watanabe's teaching on the synchronized grasping mechanisms in Ohtake's method for producing continuous molding of fiber reinforced plastic member with curvature in order to suppress the uneven distribution and disturbance in the orientation of the fiber material. Furthermore, Watanabe teaches being able to control the angle for winding by the width of the prepreg (Col 6 Line 63). As disclosed in the applicants' *Description of the Related Art*, it is important to keep the orientation of fiber slanted no more than 5 degrees with respect to the direction of tension. Therefore it would have been obvious to the one having ordinary skill in the art at the time of invention to use Watanabe's teaching of the winding angle and prepreg width and the knowledge of limit on the orientation angle in Ohtake's method for producing continuous molding of fiber reinforced plastic member with curvature in order to minimize fuzzing and breakage of the brittle carbon fibers.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang W. An whose telephone number is (571) 272-1997. The examiner can normally be reached on Mon-Fri 7 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang W. An  
Patent Examiner  
December 7, 2005



**MICHAEL P. COLAIANNI**  
**SUPERVISORY PATENT EXAMINER**